

ABSTRACT

A protocol for communicating data on a passive optical network conforming to the Ethernet standard provides processes for remote network node discovery and
5 synchronization. Uplink packet transmissions to a central controller, such as an optical line terminal, are scheduled by the central controller. Downlink packets from the central controller to a remote network node, such as an optical network unit, are encrypted to preserve
10 privacy, and the key used for encryption is changed periodically. The protocol further provides processes for detecting the loss of physical or logical connection between the central controller and the remote network nodes.